

## **REMARKS**

### **I. Status of the Claims and the Rejections**

Applicants thank the Examiner for clarifying the objection to the drawings in the Advisory Action dated April 8, 2011. To this end, the drawings were objected to for allegedly failing to show the "at least two independent cooling circuits" recited in claim 1. However, Figure 2 illustrates two independent cooling circuits (125, 127) that are "hydraulically uncoupled" from one another and each "thermally coupled" to the two cooling machines (118, 120), as described in the original specification. *See* page 8, line 33 – page 9, line 1. As explained in the specification, these independent cooling circuits (125, 127) ensure that any devices to be cooled receive adequate cooling, even when one of the cooling circuits (125, 127) fails. *See* page 3, lines 6-19. Consequently, the objection to the drawings is improper and applicants respectfully request that this objection be withdrawn.

Claims 1 and 3-23 were rejected under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness related to the recitation of at least two cooling circuits being "completely independent of each other." Claim 1 was also objected to under 35 U.S.C. § 132(a) for allegedly introducing new matter into the application based on the term "completely" independent. Applicants have amended claim 1 to remove the term "completely" and to clarify that the cold conveyance system includes "at least two independent cooling circuits," each coupled to the cold producing device. The independent cooling circuits are fully supported in the original specification at Figure 2; page 3, lines 6-19; and page 8, line 33 – page 9, line 1. Applicants respectfully request that the Section 112 rejection of claims 1 and 3-23 and the Section 132 objection to claim 1 be withdrawn.

The Advisory Action dates April 8, 2011 further indicated that the recitation of "independent cooling circuits" continues to raise new matter deficiencies under 35 U.S.C. § 132(a). Applicants respectfully disagree. The independent cooling circuits are fully supported in the original specification at Figure 2; page 3, lines 6-19; and page 8, line 33 – page 9, line 1. For example, the original specification (starting at page 8, line 33) states:

The cooling circuit 125, shown in Figure 2 by hatched lines, is hydraulically uncoupled from the cooling circuit 127, which is shown in Figure 2 with continuous lines. Both cooling circuits 125 and 127 are thermally coupled with the cooling machines 118 and 120 in which the cold carrier medium supplied to the cooling circuits 125 and 127 is cooled down.

Consequently, the amended independent claim 1 does not include any new matter under 35 U.S.C. § 132(a). Applicants respectfully request that any such new matter objection be withdrawn.

Claims 11 and 23 were also objected to for alleged informalities in antecedent basis. Applicants have amended claims 11 and 23 as proposed in the Office Action to overcome these objections. Applicants respectfully request that the objections to claims 11 and 23 be withdrawn.

Substantively, claims 1 and 3-23 were rejected as allegedly anticipated under 35 U.S.C. § 102(b) based on Simadiris U.S. Patent Publication No. 2003/0042361 ("Simadiris"). Applicants traverse these rejections. Nonetheless, applicants have amended claim 1 to further clarify the subject matter regarded as patentable. Applicants have also amended claims 5-11, 13, 14, and 20-23. In view of these amendments and the following remarks, applicants respectfully request reconsideration and allowance.

## II. Claims 1 and 3-23 are Novel

### A. The Claims

Independent claim 1 recites a cooling system for the cooling of heat producing devices in an aircraft. The cooling system includes a central cold producing device including at least two cooling machines working independently of each other. The cooling system also includes at least one cold consumer and a cold conveyance system connecting the cold producing device and the at least one cold consumer. The cold conveyance system includes at least two independent cooling circuits, each coupled to the cold producing device. To this end, the two independent cooling circuits supply a cold carrier medium to and from the cold producing device and the at least one cold consumer. The at least two cooling machines are coupled in parallel to the cold conveyance system such that each of the at least two independent cooling circuits are thermally coupled to the at least two cooling machines.

Claims 3-22 depend from independent claim 1 and recite additional features of the cooling system. For example, claim 4 requires that the cooling machines use air outside of the pressure cabin of the aircraft as a heat sink in order to expel heat. Claim 23 recites an aircraft including the cooling system recited in claim 1.

### B. The Deficiencies of the Cited Prior Art

Simadiris is directed to a liquid galley refrigeration system for an aircraft. As shown in Figures 1 and 3, the system includes a galley air cooling unit 18 for cooling food, a chiller unit 30 for expelling heat from the system, and a ducting system coupling the galley air cooling unit 18 and the chiller unit 30. A recirculation unit 32 in the ducting system pumps a working fluid 27 to and from the chiller unit 30 and the galley air cooling unit 18. In this regard,

the working fluid 27 transfers cold through a supply duct 48 and transfers heat through a return duct 50.

The Office Action states that Simadiris discloses every element of claim 1. More particularly, the Office Action cites the embodiment of Simadiris shown in Figure 8 to illustrate multiple chiller units 30 operating in parallel in an alleged cold producing device. Furthermore, the Office Action points to the embodiments of Figures 6 and 7 to show different sets of alleged cooling circuits (supply ducts 48 and return ducts 50) operating independently in different Door portions.

Applicants disagree. Simadiris is deficient because the various embodiments disclosed therein do not include the cold conveyance system recited in claim 1. For instance, claim 1 requires that two independent cooling circuits are coupled to the cold producing device. In other words, the two independent cooling circuits are coupled to the same cold producing device. Although Simadiris states that some of the elements of the refrigeration system may be reconfigured as shown in Figures 4-8, none of these illustrated embodiments of Simadiris provides two independent cooling circuits that are thermally coupled to the same cold producing device. More specifically, Figures 4, 5, and 8 of Simadiris each illustrate a single "cooling circuit" coupled to a plurality of chiller units. Figures 6 and 7 of Simadiris each illustrate multiple "cooling circuits" coupled to different sets of chiller units. None of the chiller units in any embodiment of Simadiris is coupled to multiple independent cooling circuits. *See* para. [0046]. Simadiris therefore fails to disclose every element of independent claim 1.

To further illustrate the deficiencies of Simadiris, the system of Simadiris does not provide the advantages of the currently claimed system, which can continue to provide adequate cooling in the event of technical or mechanical failures of either a cooling machines or

a cooling circuit. For example, if one of the alleged "cooling circuits" of Simadiris were inoperable, all of the galley air cooling units in at least one Door section would not be supplied with coolant. In contrast, if one of the cooling circuits 125, 127 shown in Figure 2 of the present application were to fail, at least a portion of the central galley air coolers 166-176 would remain supplied with coolant by the other cooling circuit. None of the embodiments disclosed in Simadiris achieve these benefits, and thus, Simadiris cannot anticipate claim 1.

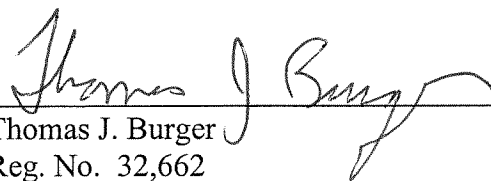
For at least these reasons, independent claim 1 is allowable over Simadiris. Each of dependent claims 3-23 depends from independent claim 1 and includes one or more additional features in combination with the features of claim 1. For substantially the same reasons set forth above with respect to claim 1, and further because the cited prior art fails to teach or suggest the subject matter recited in the claims, applicants respectfully submit that each of claims 3-23 is also patentable. Applicants respectfully request that the rejection of claims 1 and 3-23 be withdrawn, and that these claims be allowed.

### III. Conclusion

Based on the amendments to the claims and these remarks, applicants respectfully assert that all present claims are in condition for allowance, and respectfully request an allowance without further delay.

Applicants have submitted herewith the fees for the Request for Continued Examination and for a one-month extension of time. Applicants believe that no other fees are due for this filing. But if the USPTO disagrees, please consider this as an authorization to charge Deposit Account 23-3000.

Respectfully submitted,

By:   
Thomas J. Burger  
Reg. No. 32,662

WOOD, HERRON & EVANS, L.L.P.  
2700 Carew Tower  
441 Vine Street  
Cincinnati, OH 45202-2917  
Telephone: (513) 241-2324  
Facsimile: (513) 241-6234